

Blissymbolics – a Bridge to Communication

Make it available!

A supporter's view on what Blissymbolics is, how this resource could be maintained and developed, promoted and made available in a more effective manner

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Summary

This presentation primarily argues that:

- Blissymbolics should be regarded as an "artificial graphic bridging language" – a tool for bridging communication gaps between speakers/writers of different languages (the original vision) and between people with speech and language impairments and in need of AAC, and the speaking and writing community (the current main application, and the focus of BCI).
- There have been, and are, problems to gain or maintain interest in and impact of Blissymbolics in both above aspects.
 - BCI and the AAC Bliss community has particularly lost a lot of its early strong position in the English speaking AAC community
 - There are several reasons for this. A major general aspect has been, and is, problems in providing easy access to well maintained Blissymbolics resources in appropriate formats for digital environments
- Blissymbolics should be made generously and freely available to the world, based on a clear Open Resource (Creative Commons) License, and in an effective and state of the art manner – as an ontology based, concept coded, on-line, digital language resource of excellence.
- Blissymbolics should be maintained by BCI on these premises and corresponding terms, including:
 - adopting an open on-line community process approach
 - maintaining the international standardisation (Authorised Vocabulary and Fundamental Rules)
 - ✓ with a reasonable balance between different AAC needs and the original vision, and with an open and pragmatic mind towards different needs and interests
 - ✓ maintaining a careful balance between clearness and simplicity, versus power of expression, and with an integrity versus influences from different natural languages
 - the necessary resources for the maintenance should be retrieved from a carefully managed on-going sponsoring campaign, based on the good-will of the open resource policy – not from continued unclear, confusing and ineffective semi-commercial licensing schemes

Background:

My role and experiences: – a teacher, in the neighborhood of Blissymbolics for over 30 years, but not directly involved in the inner work of BCI, until recently – ICT support since the early 1980:s – BlissCom and BlissTalk Boards, OmniBliss and Talking BlissApple software, and onwards – a long winding road boarded by newborn and passed away Blissymbol software projects and products. Before proceeding any further, let me express my profound respect and admiration for the fantastic and devoted work of BCI and the personalities behind it! Any remarks that may be perceived as critical towards what has been done or proposed so far – and I will try to challenge some established views and policies – should be interpreted in relation to this fundamental expression of respect.

Blissymbolics – an "artificial graphic bridging language tool"

It may be useful to spend a few moments considering our views on what Blissymbolics actually is, and some implications that may be derived. Even though much of this may seem rather self-evident, I sense that some of the uncertainties and indecisiveness within BCI about how to manage the future for Blissymbolics are emanating from some cloudedness in this area. These are my current views:

1. Bliss is an artificial language. It was invented by Charles K Bliss, it is maintained by BCI, and it will always need such an organised maintenance to survive and develop. It is not, and will never be, a natural language, nor the "native" language or "mother tongue" of any Bliss communication community.
2. Bliss is a graphic language, based on symbols carrying semantic meaning, rather than representing phonological elements of spoken language, as in traditional orthography. It was developed in this way to be, in principle, "self contained" and as independent as possible from different spoken and written natural languages and their cultural and linguistic specifics.
3. Bliss is a bridging language tool in the sense that it was developed to bridge communication gaps between different natural language cultures. Though failing to have any substantial impact so far in this ambition, this aspect should be respected. The characteristics of this tool, as we all know, made it very suitable for AAC purposes, to bridge communication gaps between non-speaking individuals and the surrounding speaking and writing environment.

An implication of point 1 above is that the international standardisation of Bliss is desirable and possible, and that a "natural" development of Bliss is not. Attempts in that direction would most likely lead to inventions of different practices and a fragmentation of Bliss, in clear conflict with the 3:rd bridging aim of Bliss.

This means that the ability of BCI to organise the maintenance and further development of Bliss in a successful way is vital for the status of Bliss – in the AAC environment and in general. Problems in relation to this fact will be further discussed below.

(Another implication is that Bliss is not "the natural language" of Bliss users in the same sense as sign language may be for deaf persons in a sign language community. Arguments to promote the needs and rights of Bliss users building mainly on a suggested equal status between Bliss and sign language will be vulnerable, even though the basic rights of access to appropriate language resources for communication are of course shared.)

Implications of points 2 and 3 for me include the following:

We all know that the fact that Blissymbols can be recognised and interpreted on a semantic level as holistic symbol images has been vital for the successful adoption in an AAC context.

We are also aware of the importance of the carefully developed and maintained principles for how basic semantic elements may be combined to build and represent more complex symbols/concepts – how this can support the language awareness development among AAC Blissymbol users, and in many cases may help the process towards the acquisition of orthographic literacy.

In this context some of us have been worried about suggestions in relation to the so called BEL-E ("Bliss-words for Electronic and Literacy applications for English.") project that might have led to an introduction into the general vocabulary of over-complicated and over-specific symbols specifically introduced for English literacy development. This could lead to a contamination of the common Authorised Vocabulary that would damage the cross language bridging principle and purpose of Blissymbolics. On the other hand: There should be no harm in such educational trials and research, provided that they are handled as such, and kept clearly separated from the core vocabulary development and the standard application of Blissymbolics.

These issues indicate the tension that exists between the two bridging aspects of Bliss – the original cross-language one, and the secondary and language internal AAC one: There will probably always be an inclination in the AAC application to adapt or tweak Bliss for language and culture specific needs, in particular for educational purposes. This will inevitably be in some conflict with the international aspect of Bliss, and will have to be continuously watched and handled with care.

Some additional comments, and more in depth arguments related to these issues, are found towards the end of this paper, and in the Appendix.

Blissymbol vocabulary maintenance and dissemination:

We all know that **a tremendous amount of work and engagement has been invested** in the development of the Authorised Vocabulary and other aspects of Bliss. **In spite of this** there are **some weak points** in this development that I believe may have contributed to the problems for Bliss to maintain its position as a prominent option for AAC, in particular in the English speaking world: **A relative failure to develop and maintain a well balanced and up-to-date core vocabulary.**

The problems are, in my interpretation, caused by the thematic approach that has dominated the vocabulary development, in combination with the thoroughness and slowness of the process in general. Both these aspects need to be handled carefully in the future:

- **Make the maintenance of a balanced and up-to-date core vocabulary a clear first priority for the vocabulary development!** This could be based on a continuous review of most frequently used vocabulary in a number of most relevant language and cultural environments, complemented by a continuous input and review of user requests. Continued complementary thematic amendments may proceed but only on a secondary priority level.
- **Thoroughly revise the vocabulary expansion process: Make the process open and transparent, and speed it all up substantially!** This may be accomplished by setting up a system for on-line requests and candidates for new Bliss words, by balancing the need for thorough revision towards effectiveness, and by making all accepted symbols immediately available – together with the whole Authorised Vocabulary – in a range of needed formats.

These issues have of course been discussed in the BCI circles, and suggestions in the directions of those suggested above have been proposed. However, these ambitions still, after several years, largely remain to be concluded and realised in practice.

So what is the problem? Why has it been, and is still, so difficult for BCI to effectively make the symbol resource available for its current and potential users? You cannot help but being struck by the irony: BCI fostering the communication bridging resource of Blissymbolics, mainly for AAC purposes – seems to itself be suffering from **a sort of impaired communication** – having **problems in mobilising its main resource for communication**; that is, the Blissymbols!

I'm convinced that **a key to this problem lies in the conflicting and unclear ambitions and policies** concerning free access to symbols for users and non-commercial use on one hand and, on the other hand, the ambition to adjust to commercial market conditions for the dissemination of symbol resources via AAC products, with hopes for generating economic revenue from this (much needed, no doubt).

It is probable that the poor support for Blissymbols in many of the second generation of AAC devices and software packages has contributed to the negative penetration and use of Bliss – in particular in the English speaking countries. It is even possible that a more decisive commercial licensing program at that stage might have succeeded in making this trend less prominent.

However, **any move now to try to tighten up licensing to match commercial strategies would, in my view, be very unfortunate, and most likely counterproductive.** The timing for this would be totally wrong, at a time when there is a strong world-wide surge for free and open source software

and matching free and open knowledge and data resources for the global networked society. This ethos matches that of Blissymbolics like a hand in the glove (See www.gnu.org & www.fsf.org & <http://creativecommons.org>). Restricted proprietary licensing does not.

So let's stop saying: "Blissymbols are free to use – unlike commercial symbol systems" – at one moment, and then; "Blissymbols should be commercially licensed and distributed, just like the other commercial symbol resources – only a bit cheaper" – at the other moment! This is contradictory and confusing. It is obvious that the commercial ambitions of BCI, in relation to those producers and products that have in fact supported Bliss, have been both confusing and unsuccessful. Only very little licensing money has been paid to BCI, from one or two companies that have been particularly motivated to support BCI anyway.

Let's instead say: "Blissymbols are free to use – unlike proprietary symbol systems – and we'll do our very best to make them freely available – on these specific free licensing terms – for all and everyone"! (www.gnu.org/licenses & www.fsf.org/licensing & <http://creativecommons.org/licenses> – Note: Some Creative Commons licences are not very free!)

This will be a clear message that will not be misunderstood. It could make us an appreciated participant in, and representative of, the open (re)source communities. It would directly match – and in fact be necessary for – the suggested move to open up the vocabulary maintenance process.

Then we can say: "Help us, support us, sponsor us!" – to commercial distributors, private and public organisations, and to individuals. We may also consider the offering of paid services and products accompanying – but not tied to limiting licensing of – the Blissymbol resources. A well managed campaign of this kind would be likely to generate a lot more income than a continuation of a half-hearted semi-free, semi-proprietary approach. It would help to mobilise enthusiasm and constructive human resources throughout the Bliss community, and it would avoid making BCI affiliates carriers and guardians of restrictive distribution rights (which has been suggested, and that has caused a great deal of bad feelings among several of those).

Some technical issues:

Why is it important to build the maintenance of, and future support for, Blissymbolics on a foundation of publicly defined and vendor neutral ontology based concept coding – a Concept Coding Framework (CCF)? [Further information about the WordNet ontology at <http://wordnet.princeton.edu/> and about CCF at www.conceptcoding.org]

Andy Judson presents the fundamental facts and arguments concerning concept coding in this ThinkTank seminar. Let me just point out some specific aspects for Blissymbolics and BCI.

- CCF is general in its approach to provide a framework for symbol and multimodal language support, but Blissymbolics will have a central role to play:
 - It is the natural prime, if not only, representative of a full-featured symbolic language representation.
 - Bliss can be made freely available, while all other current major systems (as Rebus and PCS) are proprietary. (Freely available picture symbol libraries will inevitably be developed in the fairly near future, as the current situation, with AAC users being made dependant on proprietary language tools, with severe limitations of use, is a growingly absurd condition in a networked society.)
- As Bliss has a role to play for the CCF, the CCF has an important role to play for Bliss:
 - The vocabulary maintenance of Bliss will be greatly supported by the ontology foundation of the CCF, with its access to concept definitions and examples etc.
 - Good conditions for providing a thorough support for multilingual localisation will be an integral part of the CCF environment, which is of course critical for Blissymbolics

- CCF as an open, vendor neutral and state of the art language technology foundation will be essential for the future of Blissymbolics in several ways:
 - ✓ to make it a natural and available option in concurrent Internet service environments (including the Semantic Web - www.w3.org/2001/sw/ - etc)
 - ✓ to avoid too tight dependencies of any particular commercial vendor or vendors
 - ✓ while providing a strong position for developing sound relations to all relevant commercial or non-commercial actors in the area, including bridging functions between different proprietary systems
 - ✓ A common CCF foundation for Blissymbolics and other graphic symbol systems will provide excellent opportunities for the introduction, teaching and learning of Blissymbols in a wider range of conditions.
- A specific on-line database design, based on the CCF, will have to be developed for Bliss – building on resources and ideas from www.blisswords.co.uk/ , www.symbolnet.org and Andy Judson's work etc.

A few words about the digital formats for creating and handling Blissymbols: We have been, and are still to different degrees, using two main digital formats:

- **Blissymbol fonts** – that provide support for Blissymbols as characters within standard text based digital environments, such as word processors etc. A number of such Bliss fonts have been developed over the years, but have tended to be kind of “hacked” solutions that have shown to be hard to support and maintain over time.
A major ambition has been to establish a proper standard Unicode font. This could be the major break-through for the Blissymbol font approach, which we are still waiting for.
- The major advantage of this format – in particular a Unicode version – is that it, in principle, renders support for Blissymbols in all standard text based digital environments, including methodologies and tools for text search and other processing.
- The major hurdle in the establishing of a Bliss Unicode font is probably the difficulties to identify and decide a sufficient set of Bliss “characters” needed to represent all current and future Blissymbols or Bliss-words.
- **Blissymbols as graphic files** – the most common way to represent Blissymbols in former and current AAC software. A large number of different graphic file formats need to be supported.
- Main advantage is the flexibility to create new Bliss characters and words freely in a graphic environment
- Another advantage is that support for Blissymbols may be provided on the same conditions as for other graphic symbol systems in popular AAC software and devices
- Main disadvantage being the complication in having to support a large number of different graphic formats for different software environments.
- **Conclusions:**
 - The efforts to establish a Unicode Blissymbol font should continue, but the graphic image file formats will probably continue to dominate in the short and medium term perspective.
 - Good support for all common file formats is needed, both bitmapped formats (such as PNG, GIF, JPEG, BMP – in a number of different sizes), and vector based, scalable formats (such as the existing MS Windows specific WMF/EMF, but also the new open standard SVG, and possibly also SWF – Flash).

Finally: The future for the so called ISO codes for Blissymbols/words is a policy and technical issue that may need some discussion and further clarification.

Some last remarks on the debate concerning “symbol refinement”:

I (in contact with my colleagues Ingrid Mattson-Müller and Britt Amberntson and others) have during the passed couple of years in periods been involved in an intensive and stimulating debate with Shirley McNaughton about the need for, and blessing of, further refinement of Blissymbolics. The discussions have brought up several issues of general interest, and some differences in views and perspectives became particularly obvious during last years discussions concerning the work to align and complement the Blissymbol vocabulary to match the Widgit Rebus vocabulary resources.

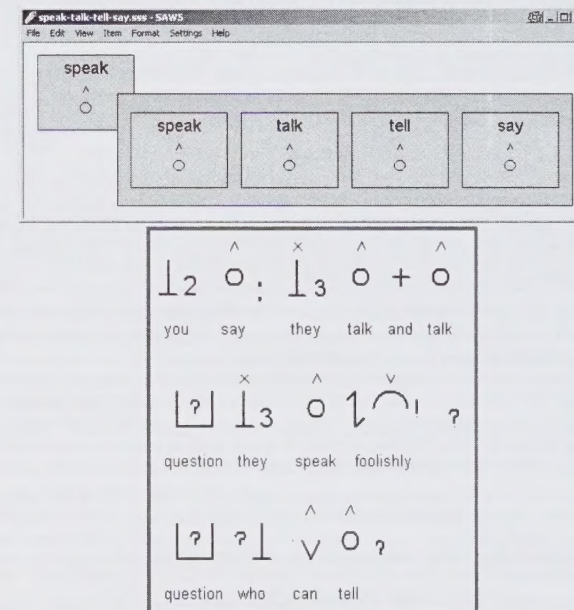
Several of the thoughts presented in this paper have been formulated more clearly in these valuable and stimulating email discussions with Shirley, for which I sincerely thank her.

To give a bit more of the background for those interested, and with the permission of Shirley, an excerpt of one of our lengthy discussions (early 2006), plus some recent comments (May 2007), are amended in the **Annex**.

Conclusions

... are found in the Summary that started this paper :-)

Post Scriptum:



Appendix:

Excerpt of a discussion (early 2006) between Shirley McNaughton and Mats Lundälv. Shirley's M's parts in **bold**, **black CAPITALS** and Mats L's in green lowercase (except Shirley's **BEL-E Bliss-words** proposal example of mouth + action indicator = speak ... etc in bold and red lowercase).

At the end is a copy from WordNet's (<http://wordnet.princeton.edu/>) definitions of different senses of the words **speak**, **talk**, **say** and **tell**.

"... About Shirley's arguments: They display a lovely spirit and engagement for the promotion of Blissymbolics and to further realise the system's potential. But some of the conclusions are far from self-evident. Some examples:

❑ **BLISS IS CAPABLE OF GREATER REFINEMENT.** This is evident and we can all agree.

❑ **I WANT TO IMPLEMENT THIS REFINEMENT.** This is also evident, but:

❑ it is not evident that substantial re-definition of existing Bliss concepts should be done and published as a **core vocabulary in a wide-spread product** as part of the extraordinary fast procedure.

Furthermore, it is **not self-evident** that the practical implementation of the potential for greater refinement is actually generally beneficial for the Bliss system and its users:

❑ **Evidence and consequence analysis is needed – and lacking.**

❑ There will surely be **pros and cons** – different for different needs and purposes.

❑ **More refinement will also mean more complexity** – maybe useful and manageable for some users in some situations, but probably the opposite for many other (we believe most) users in other situations.

❑ And for the acceptance of system itself: Bliss is **far too often rejected by therapists and teachers for being perceived to be too complex and 'difficult'** – in favour of 'simpler'/'easier' pictorial alternatives. What will a hasty and full-scale introduction of a substantial amount of more refinement mean to the over-all acceptance of Bliss? Make it much more popular? Very doubtful!

❑ **MY PLAN IS TO REMOVE LINKS TO SYNONYMS, FOR THE PURPOSE OF BEL-E WHENEVER THE ENGLISH WORDS ARE NOT INTERCHANGEABLE OR CAUSE INFERIOR GRAMMAR CONSTRUCTIONS.** When words – in English or other languages – are, or are not, interchangeable is far from self-evident. Neither is it indisputable to what extent correct English (what about other languages?) grammar should rule the development of Blissymbolics. We need more concrete examples of what this may imply, but some of the few given examples are interesting and worrying. Let's look at the given "speak, talk, tell, say" example:

The BEL-E Bliss-words that would follow from this proposal would be

mouth + action indicator = speak (When we act with our mouth, we speak.)

mouth + action indicator + colon + about = talk (We talk "about" things.)

mouth + action indicator + colon + person = tell (We "tell" people. We also tell stories, but we need to choose the most frequent usage or what can be easily remembered and focus on that in explaining and teaching the Bliss-word. There is ample precedent for that in C.K.B. e.g., man, woman, child, adult.

Memorability is the most important factor).

mouth + action indicator + colon + thing = say (We say "things")

These suggestions give the impression that a) these English words should never be interchangeable, should have obviously different definitions and meaning, and that b) these could and should without problems be reflected in the introduction of different variants of Bliss-words in the BEL-E vocabulary.

❑ The first assumption is clearly not the case, and the second is not at all self-evident. Each of these words, in themselves, have a range of different meanings which are partly overlapping, sometimes interchangeable, sometimes not. **The meaning of these and most other words is in fact always more or less "fuzzy" and largely dependent of context, dialect and style etc.** (See

the copies of the concept definitions for these words from the WordNet concept lexicon at the end of this lengthy discussion, which shows that the verbs "talk" and "speak" are largely overlapping, as are "say" and "tell" - not to forget the many more or less different definitions/meanings that exist for each of these words or word pairs in themselves)

❑ **In this light it can be strongly argued that the "fuzziness" of the current Blissymbol representations linked to these words is rather a blessing than a problem.** It provides a level of "wideness" in the definition of the symbol concepts that **can easier cope with the wide variations in the usage of the words.**

In fact, the introduction of the suggested more refined Bliss-word representations may often be directly semantically misleading and confusing when applied in the Wigit applications – if at all appreciated by the majority of Bliss users in daily use, that is.

❑ Furthermore, the less refined Bliss-word will always be accompanied by the different words themselves providing their extra level of fuzzy – but special - flavour. The refinement of the symbol is not required to provide correct speech output representation etc. That can be ensured by providing the adequate word with the symbol. So **why should it be so urgent to squeeze in and tie the words up to more detailed Bliss-word definitions and rapidly publish those in the core Wigit vocabulary?** The answer is that this ambition introduces controversial and problematic issues that **should not be forced.**

❑ Also, this – **if the tasks are not separated** – will introduce more, and possibly severe, **problems for the international use of Bliss**, as the variation of word usage and overlapping does not match between translations of synonyms or related words in different natural languages.

NOTE! The Wigit vocabulary is NOT just an English one with Rebus symbols (and PCS and Bliss to come). It is a proprietary **concept database** with English and a growing number of other language lexicons, as well as Rebus and other symbol representation databases attached to it. So **adding Blissymbols to the system should NOT be handled as just an English speaking issue!**

❑ This example clearly illustrates and motivates our request for a clear and healthy level of restrictiveness in the suggested introduction of changes and refinements in the existing and extended core Bliss lexicon as part of the Wigit project's time critical main task.

... RATHER I THINK THE LANGUAGE DEVELOPMENT OF THE BLISS USER SHOULD BE THE PRIMARY FACTOR.

Who does not agree? But the question is whether the ambitions in terms of rapid refinement will really be favourable for the majority of Bliss users' communication and language development needs. We are not convinced.

I DO THINK IT IS THE TASK OF THE BEL-E TEAM TO GIVE SERIOUS CONSIDERATION TO THESE MATTERS WITH THE END USER AND THEIR READING AND WRITING OF ENGLISH IN MIND.

Here is a tendency to view Bliss as primarily a tool for developing (English!) reading and writing skills. Should this perspective steer strategical decisions for the further development and general dissemination of the system? **Is this in the definite interest of the majority of end users? This is not at all clear!**

❑ Bliss being the superior AAC symbolic system in promoting the development of traditional literacy among its users is an important aspect, but not the only one. The majority of Bliss users, as we know them, have **other basic communication needs** that are just as, or more important. They may well be in different degrees of conflict with the suggested direction of development, e.g. problems with visual perception, sequencing capacity, and other cognitive and learning issues. These needs often call for clarity and limitation in refinement and complexity. **These other needs are not clearly taken into account in the refinement ambition.**

❑ **These greatly varying needs may all be well supported by Bliss - but only if they are carefully balanced.** The (English!) literacy learning aspect should not be imposed on the system in general, but may be developed and offered as a special option for such purposes.

I SEE BLISS AS PROVIDING A MORE ADVANCED STAGE OF THE WIDGIT SOFTWARE. THIS IS MY UNDERSTANDING OF WHAT TINE DETHERIDGE WANTS – SOFTWARE FOR A HIGHER STAGE OF DEVELOPMENT THAN WHAT POSSIBLE WITH REBUS.

Bliss in its present state – with the addition of necessary adequate symbols to cover the full vocabulary, and with restrictive changes of clearly unsatisfactory word-symbol relations – would definitely provide a clearly more advanced option for the Widgit software – as well as for other software and in general.

- Shirley's suggested additional refinements for English may well be proposed, discussed and tested alongside with the basic task, but on another schedule, giving time for proper consideration and decision-making. The results may then be introduced as a special option for the Bliss vocabulary – as a second stage.

...

Shirley's recent comments (May 2007) – with a short final comment by Mats (in bold blue):

Dear Mats,

... I appreciate you waiting, in order to up-date your report of my thinking and action re your argument against including Bliss-words that are developed to meet specific-application needs in the BCI Authorized Dictionary. (In this instance, the need for refinement of speech produced by VOCA's and the refinement of Bliss-vocabulary used in children's reading materials being represented graphically through Bliss-words.) At the time of the correspondence you have quoted, I also had to relate to the resistance of several Bliss colleagues to having a separate special Bliss-vocabulary for these purposes. I am trying to recall the meaning that BEL-E represented at the time I proposed it, and I think it was "Bliss-words for Electronic and Literacy applications for English." (It would be helpful as well to give the meaning of the acronym in your paper.) I know several names were considered, but in the end there was no need to decide upon one, as the idea of a separate vocabulary was not developed further.

Following much thought, my response to the arguments against a "BEL-E" was to follow a different path in order to achieve the goal that I believe is important for a sub-group of Bliss users. I produced a Bliss strategy, as I did in the early seventies when teaching full-time in the Bliss classroom. During those early days in teaching young children, I developed the "combine strategy" to appease the concern of Mr. Bliss when children developed their own symbols that he did not consider acceptable for his vocabulary. This strategy is still used to-day whenever the required concept is not available to the user.

The strategy I developed last year is called the colon strategy and it is explained as follows:

**Strategy
for Refining and Expanding Vocabulary
for English-speaking users of Blissymbolics.**

The language of Blissymbolics has long proven its strength for generalization (i.e., each Bliss-word representing a concept which can be expressed by several spoken words). The Bliss user points to a Bliss-word on their display. Their listener responds with a word from the range of possible English synonyms represented by the Bliss-word. The Bliss-user indicates if the chosen English word is satisfactory. If it is not agreed to by the Bliss-user, their partner tries other synonyms until the intended synonym is spoken by the partner.

However,

This does not happen when the Bliss-user communicates using a VOCA or when translations are being made from Bliss to English. In these instances a single selection from the list of possible synonyms (i.e., the "default") synonym is produced. The Bliss-user has but one option – the English word that has been assigned to that Bliss-word. Within these applications the generalization capability of Bliss becomes a limitation. As the language of Blissymbolics has been developed through the decades, there has been no need for specific Bliss-words to match specific spoken words for successful interpersonal communication to occur. Hence, Bliss-words have not been developed for each of the English words associated with a particular Bliss-word. The *Colon Strategy* has been developed at the Blissymbolics Learning Centre classroom in 2006 to respond to this limitation when using VOCA's or doing translations.

Synonym Strategy for Electronic Translations: Using the Colon

When an English synonym other than the default word is desired by the Bliss-user, they can create a new Bliss-word using the colon. This strategy allows the original generalized meaning to be available to those who do not require the use of this strategy, but enables the user to symbolize and have access to a more precise meaning within a VOCA or for the purpose of translation. The English word to be spoken is identified by the qualifier that follows the colon. The qualifier is typically an attribute or association that is memorable.

e.g.,

hear



listen



I present it as a personal strategy to be used by individual users and teachers as they desire and require it. This particular situation provides an excellent example of the much larger challenge of providing additional ways in which Bliss-word vocabulary is developed. We need to arrive at a balance between maintaining an international standard and responding to the needs of those who use and teach Blissymbolics for communication, language and literacy development. Through the years we have discussed many times two approaches to vocabulary development - bottom-up and top-down. During the lifetime of C.K. Bliss, we established the procedures for an adapted top-down structure for producing vocabulary – the Secretariat - with as much input as possible from those teaching the language. The work has been very responsibly and competently done. We all realize, however, that the time and work required for this approach falls short of being able to respond to the needs of all users. The argument has continued to be presented that for Blissymbolics to live and develop to its potential, a bottom-up approach is also needed. This argument was supported by comparing Blissymbolics to natural languages. Your paper clearly presents the weakness in this argument. However, the needs identified through usage for different worthy purposes must not be discounted. We still need to address this concern. My development of a strategy was my interim way of dealing with the need.

Hopefully the Think Tank will help us gain further understanding of these issues as we consider the potential of Blissymbolics as an invented and graphic language with many possible purposes. This sets it apart from both natural languages and picture sets and speaks to your argument that we need to carefully consider the ways in which vocabulary is maintained and developed. I hope we will find ways to approach vocabulary development so that attention can be equitably given to its various applications with different populations for different purposes. Only by following this course will Blissymbolics reach its full potential.

Thanks so much Shirley for the update and clarifications of your views! This gives us a clearer base-line for our discussions in Dundee. I clearly see your points in the need to provide advanced Bliss users with selection tools for providing more accurate text output. I'm still not convinced that this motivates or requires a more substantial expansion of the Bliss-word vocabulary to match individual related words in different languages. But further argumentation will have to wait until the Think Tank. Looking forward to that! /ML

From WordNet - definitions of "speak", "talk", "tell" and "say":

The verb **speak** has 5 senses (first 5 from tagged texts)

1. (88) talk, speak, utter, mouth, verbalize, verbalise -- (express in speech; "She talks a lot of nonsense"; "This depressed patient does not verbalize")
2. (53) talk, speak -- (exchange thoughts; talk with; "We often talk business"; "Actions talk louder than words")
3. (23) speak, talk -- (use language; "the baby talks already"; "the prisoner won't speak"; "they speak a strange dialect")
4. (11) address, speak -- (give a speech to; "The chairman addressed the board of trustees")
5. (3) speak -- (make a characteristic or natural sound; "The drums spoke")

The **noun talk** has 5 senses (first 3 from tagged texts)

1. (12) talk, talking -- (an exchange of ideas via conversation; "let's have more work and less talk around here")
2. (1) talk -- (discussion; ('talk about' is a less formal alternative for 'discussion of'); "his poetry contains much talk about love and anger")
3. (1) talk -- (the act of giving a talk to an audience; "I attended an interesting talk on local history")
4. lecture, public lecture, talk -- (a speech that is open to the public; "he attended a lecture on telecommunications")
5. talk, talk of the town -- (idle gossip or rumor; "there has been talk about you lately")

The **verb talk** has 6 senses (first 5 from tagged texts)

1. (109) talk, speak -- (exchange thoughts; talk with; "We often talk business"; "Actions talk louder than words")
2. (26) talk, speak, utter, mouth, verbalize, verbalise -- (express in speech; "She talks a lot of nonsense"; "This depressed patient does not verbalize")
3. (8) speak, talk -- (use language; "the baby talks already"; "the prisoner won't speak"; "they speak a strange dialect")
4. (4) spill, talk -- (reveal information; "If you don't oblige me, I'll talk!"; "The former employee spilled all the details")
5. (2) spill the beans, let the cat out of the bag, talk, tattle, blab, peach, babble, sing, babble out, blab out -- (divulge confidential information or secrets; "Be careful--his secretary talks")
6. lecture, talk -- (deliver a lecture or talk; "She will talk at Rutgers next week"; "Did you ever lecture at Harvard?")

The **verb tell** has 8 senses (first 8 from tagged texts)

1. (196) state, say, tell -- (express in words; "He said that he wanted to marry her"; "tell me what is bothering you"; "state your opinion"; "state your name")
2. (190) tell -- (let something be known; "Tell them that you will be late")
3. (75) tell, narrate, recount, recite -- (narrate or give a detailed account of; "Tell what happened"; "The father told a story to his child")
4. (60) order, tell, enjoin, say -- (give instructions to or direct somebody to do something with authority; "I said to him to go home"; "She ordered him to do the shopping"; "The mother told the child to get dressed")
5. (28) tell -- (discern or comprehend; "He could tell that she was unhappy")
6. (6) assure, tell -- (inform positively and with certainty and confidence; "I tell you that man is a crook!")
7. (4) tell, evidence -- (give evidence; "he was telling on all his former colleague")
8. (3) distinguish, separate, differentiate, discern, discern, severalize, severalise, tell, tell apart -- (mark as different; "We distinguish several kinds of maple")

The **noun say** has 1 sense (no senses from tagged texts)

1. say -- (the chance to speak; "let him have his say")

The **verb say** has 11 senses (first 10 from tagged texts)

1. (2593) state, say, tell -- (express in words; "He said that he wanted to marry her"; "tell me what is bothering you"; "state your opinion"; "state your name")
2. (722) allege, aver, say -- (report or maintain; "He alleged that he was the victim of a crime"; "He said it was too late to intervene in the war"; "The registrar says that I owe the school money")
3. (91) suppose, say -- (express a supposition; "Let us say that he did not tell the truth"; "Let's say you had a lot of money--what would you do?")
4. (50) read, say -- (have or contain a certain wording or form; "The passage reads as follows"; "What does the law say?")
5. (38) say -- (state as one's opinion or judgement; declare; "I say let's forget this whole business")
6. (23) say -- (utter aloud; "She said 'Hello' to everyone in the office")
7. (11) order, tell, enjoin, say -- (give instructions to or direct somebody to do something with authority; "I said to him to go home"; "She ordered him to do the shopping"; "The mother told the child to get dressed")
8. (9) pronounce, articulate, enounce, sound out, enunciate, say -- (speak, pronounce, or utter in a certain way; "She pronounces French words in a funny way"; "I cannot say 'zip wire'"; "Can the child sound out this complicated word?")
9. (5) say -- (recite or repeat a fixed text; "Say grace"; "She said her 'Hail Mary'")
10. (3) say -- (communicate or express nonverbally; "What does this painting say?"; "Did his face say anything about how he felt?")
11. say -- (indicate; "The clock says noon")